REMARKS

Applicant respectfully requests re-consideration of the application in view of the amendments and the arguments presented below.

Summary of Office Action

Claims 1-18 are pending.

Claims 1-7, 9-16, 18 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 4,866,767 of Tanimoto, et al. ("Tanimoto") in view of U.S. Patent No. US2004124996 A1 of Anderson ("Anderson").

Claims 8 and 17 were indicated as being allowable if re-written.

Summary of Amendments

Claims 1, 7, and 10 were amended. Support for the amendments to the claims may be found in the specification including the claims as originally filed and the Figures. Applicant submits that the amendments do not add new matter.

Response to 35 U.S.C. § 103 rejections

Claims 1-7, 9-16, and 18 were rejected as being unpatentable over Tanimoto in view of Anderson.

Claims 1 and 10 have been amended. Applicant submits that the cited references do not teach or suggest: a) *a first pair of current drivers coupled to the subscriber line through impedances Z1 and Z2 respectively of the impedance bridge for driving a voice signal in a first frequency range onto the subscriber line;* and b) *a second pair of current drivers coupled to the impedance bridge for driving a data signal in a second frequency range onto the subscriber line, wherein the impedance bridge couples the second pair of current drivers to the subscriber line across an output impedance of substantially Z1+Z2 within the second frequency range.*

With respect to Tanimoto, the Examiner has stated:

> Tanimoto, et al teach a subscriber line driver apparatus shown in Fig. 3, comprising:
>
> an impedance bridge comprising a first impedance NZT (11), a second impedance MZB (12), and a capacitor C (28), and coupled to a subscriber line; and
>
> a first pair of current drivers (1,2) coupled to the impedance bridge for driving a voice signal in a first frequency range (i.e., audio band) onto the subscriber line (Figs. 1-8; col. 4, line 45 to col. 6, line 12)

(05/17/2006 Office Action, p. 2)

The Examiner has also stated "Anderson teaches using current driver for driving a data signal in high frequency bands including ADSL and HDSL [Fig. 2, para: 0003; 0099-0103; 0169-0198]". The Examiner further stated that the recitation Z1+Z2 in claim 1 was considered as "identification only" and did not constitute a limitation until defined in the dependent claims.

Applicant submits that 1) there is no motivation to combine Anderson and Tanimoto in the fashion suggested by the Examiner, nor is such a combination apparently workable, and 2) the combination proposed by the Examiner does not teach the claimed frequency response of the impedance bridge (i.e., the limitation Z1+Z2 is a limitation that must be given weight in the amended independent claim).

With respect to the first point, Tanimoto's "impedance bridge" appears to be a fundamental component for achieving a hybrid function. Presumably, the impedance bridge is optimized for *voiceband* communications. Tanimoto does not contemplate coupling another pair of current drivers for handling data signals in a different frequency range to the same impedance bridge. Indeed, applicant submits that the Examiner's proposal would seem to render havoc on Tanimoto's computations required for achieving the hybrid function set forth at Tanimoto, cols. 6-9 and would appear to also require undisclosed, uncontemplated changes to Anderson's circuitry (feedback to the current drivers) to maintain the hybrid effect for both voice and data communications. In short, applicant submits that the Examiner's proposed combination is neither motivated nor readily workable.

With respect to the second point, the Examiner is relying solely upon Tanimoto for the impedance bridge. At the very least, applicant submits that Tanimoto does not teach a frequency responsive impedance bridge such that a first pair of current drivers driving a voice signal within a first frequency range is coupled to the subscriber line through impedances Z1 and Z2 respectively, *and a second pair of current drivers coupled to the impedance bridge for driving a data signal in a second frequency range are coupled across an output impedance of substantially Z1+Z2 within the second frequency range.*

To the contrary, the Examiner must presume that Tanimoto's impedance bridge is either a) optimized for voiceband communications, or b) is indifferent with respect to voiceband and data communications. Under either scenario, even if the combination was motivated and workable, there is no teaching or suggestion of the frequency response claimed by applicant. The capacitor of Tanimoto, for example, is used solely to eliminate DC components (Tanimoto, col. 10, lines 36-47) and thus has no further impact on either voiceband or higher frequencies such as utilized for the data communications.

Thus, applicant submits that the cited references alone or combined do not teach or suggest: (a) *a first pair of current drivers for driving a voice signal within a first frequency range onto the subscriber line, wherein within the first frequency range Z1 couples one of the first pair of current drivers to the subscriber line and Z2 couples the other of the first pair of current drivers to the subscriber line;* and b) *a second pair of current drivers coupled to the impedance bridge for driving a data signal in a second frequency range onto the subscriber line, wherein the impedance bridge couples the second pair of current drivers to the subscriber line across an output impedance of substantially Z1+Z2 within the second frequency range.*

In contrast, claim 1 includes the language:

> 1. A subscriber line driver apparatus comprising:
> an impedance bridge including impedances Z1 and Z2 coupled to a subscriber line;
> *a first pair of current drivers for driving a voice signal within a first frequency range onto the subscriber line, wherein within the first frequency range Z1 couples one of the first pair of current drivers to the subscriber line and Z2 couples the other of the first pair of current drivers to the subscriber line;* and

a second pair of current drivers coupled to the impedance bridge for driving a data signal in a second frequency range onto the subscriber line, wherein the impedance bridge couples the second pair of current drivers to the subscriber line across an output impedance of substantially Z1+Z2 within the second frequency range.

(Claim 1, as amended)(*emphasis added*)

Similar arguments may be made with respect to amended claim 10 which includes the language:

10. A subscriber line driver apparatus comprising:
an impedance bridge including a first impedance Z1 and a second impedance Z2 coupled to a subscriber line;
a first pair of current drivers coupled to the impedance bridge for driving a voice signal in a first frequency range onto the subscriber line through Z1 and Z2 respectively;
an impedance synthesis circuit providing a feedback signal to the first pair of current drivers; and
a second pair of current drivers coupled to the impedance bridge for driving a data signal in a second frequency range onto the subscriber line, wherein within the first frequency range an output impedance across the subscriber line is controlled by the impedance synthesis circuit, wherein within the second frequency range the output impedance is substantially Z1+Z2.

(Claim 10, as amended)(*emphasis added*)

Thus applicant submits amended claims 1 and 10 are patentable over the cited references under 35 U.S.C. § 103. Given that claims 2-9 depend from claim 1 and claims 11-18 depend from claim 10, applicant submits claims 2-9 and 11-18 as amended are likewise patentable over the cited references.

Applicant submits the rejections under 35 U.S.C. § 103 have been overcome.

Conclusion

In view of the arguments presented above, applicant respectfully submits the applicable rejections and objections have been overcome. Accordingly, claims 1-18 should be found to be in condition for allowance.

If there are any issues that can be resolved by telephone conference, the Examiner is respectfully requested to contact the undersigned at **(512) 858-9910**.

Respectfully submitted,

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